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APPLICANT: TOSHIBA CORP;

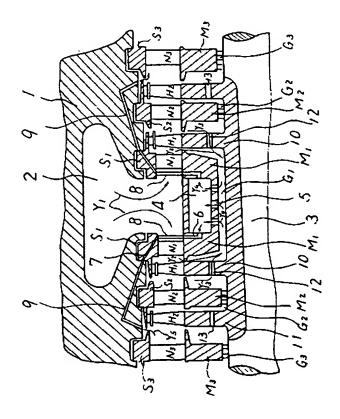
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TITLE

STEAM TURBINE



ABSTRACT:

PURPOSE: To suppress the thermal fatigue of the rotor of a steam turbine employing a reheating cycle, by causing the mixture of leaking steam at the outlet ports of the inner rings of first-stage nozzle sections and that at the outlet ports of the butts of first-stage blades to flow as cooling steam on the surface of the rotor.

CONSTITUTION: Reheated steam of high temperature is conducted from an inlet opening 2 so that the steam is divided into two directions Y1. The divided portions of the steam flow through first-stage nozzles N₁ so that the steam portions are accelerated. The steam portions then flow on the blades H₁ of a rotor 3 to perform work. After that, the steam portions flow to downstream nozzles N_2 , N_3 and blades H_2 . In that case, the surface of the rotor 3 is cooled by reheated steam of lower temperature than reheated steam portions Y2~Y5. Since the temperature of the steam Y3 which has performed work while flowing on the first-stage blades H₁drops much, the mixture of leaking steam Y₂ from the first-stage nozzles N₁ and that Y₃ the first-stage blades H₁ has a slightly lower temperature than the reheated steam Y₁ at the inlet opening 2 of a medium-pressure turbine. For that reason, the surface of the rotor 3 is cooled by the mixture conducted through a gap G₁.

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